



## **EFORT Robotics Travelling Fellowship Report**

Supported by Stryker

**February – March 2020**

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### **The Fellowship and Hosts**

It was our honor to be awarded the first EFORT Robotic Travelling Fellowship, which was kindly sponsored by Stryker. It ran from the 23<sup>rd</sup> February until the 21<sup>st</sup> March 2020. Over this time, we had the opportunity to visit 3 centers across Europe, and meet some fantastic Surgeons and their teams who had a wealth of knowledge regarding robotic-assisted surgery with the MAKO, as well as other robots. We visited Prof. Henning Windhagen and Dr. Max Ettinger at the Orthopaedic Clinic of the Hannover Medical School (DIAKOVERE Annastift), Hannover, Germany, followed by Prof. Pascal Kouyoumdjian at the University Hospital Center of Nîmes, France, and finally Prof. Fares Haddad at University College London/Princess Grace Hospitals, London, UK. Unfortunately, it was not possible to visit Dr. Fabio Catani at Policlinico of Modena University, Italy, due to the Covid-19 outbreak, as was previously planned.

### **The Fellows**

Mr David A. George, from the United Kingdom graduated from The University of Birmingham Medical School, and is in his final year of Specialist Trauma and Orthopedic Training on the North West Thames Rotation. Currently based at the Royal National Orthopedic Hospital, Stanmore, UK, he is working within the Joint Reconstruction Unit. His subspecialty interest is adult lower limb arthroplasty including complex primaries, revisions, and periprosthetic infection, a main focus of his research.

Mr Veenesh Selvaratnam, originally from Malaysia, graduated from the University of Liverpool, and completed his Specialist Trauma and Orthopedic Training (CCT) in 2017 in Liverpool. He has had the opportunity to complete post-CCT fellowships at prestigious centers across the UK including the Wrightington Pelvic Trauma, Hip & Knee Fellowship, the Bristol Knee Fellowship and the Exeter Hip and Knee Fellowship. His subspecialty interest is Pelvic Trauma, Lower Limb Revision Arthroplasty and Knee Surgery.

### **Hannover Experience**

We spent the first week of our Fellowship under the supervision of Prof. Henning Windhagen and Dr. Max Ettinger at the Orthopaedic Clinic of the Hannover Medical School (DIAKOVERE Annastift), Hannover, Germany. Whilst attached to the Medical School, the Orthopaedic Hospital pre-dates the main Hannover general hospital, and remains as a purely elective centre for Orthopaedics. They were one of the first centers to use the MAKO in Europe, and have been heavily involved in teaching other units of its benefits so it was a pleasure to visit here. They used navigation-assisted surgery for the majority of their partial and total knees replacements; opting for manual jigs when a custom implant was used.

Across the week we were able to scrub up and assist on a variety of cases including simple varus knees, complex post-traumatic severely arthritic knees, and partial medial unicompartmental knee replacements. The average was 4 to 5 cases per theatre. The team believed heavily upon kinematic alignment, which was felt to be better for patella tracking, and functional outcome.



*Pre-operative planning using the MAKO software in theatres in Hannover*

We also assisted in other cases such as primary total hips (done supine, through a Hardinge approach without navigation), revision total knees requiring custom tibial sleeves and a hinge, distal femoral replacements for periprosthetic fractures, as well as mini-open hip arthroscopies for femoroacetabular impingement.

On the Wednesday we were invited to present at a mini symposium. The host team presented the results of their research, and the various knee alignment options and outcomes in arthroplasty. David presented the outcome of the use of massive endoprosthesis in infection at the Royal National Orthopaedic Hospital, and Veenesh presented the outcome of using the Exeter femoral stem as a spacer (CUMARS) in a staged hip revision for infection.

Two of the evenings were spent out with the host team in local restaurants serving stereotypical German cuisine.

The team were really hospitable and it was definitely helped by their grasp of the English language. We learnt a lot about the benefits of computer-assisted surgery, particularly about kinematic alignment around the knee, and it was also good to observe other elements to their patient care, in particular the strict infection prevention policies in the operating suite, and the swift running of the staff on the floor.



*Dinner with the team in Hannover (Prof. Henning Windhagen 4<sup>th</sup> from right, and Dr. Max Ettinger 3<sup>rd</sup> from left)*

## **Nîmes Experience**

Our second week was spent in the beautiful city of Nîmes in the South of France, under the supervision of Prof. Pascal Kouyoumdjian at the Nîmes University Hospital. The hospital is a Trauma center covering a large area, with the sister hospital based in Montpellier.

Within the department there were three Surgeons using MAKO in their routine hip and knee arthroplasty procedures, and we were scrubbed with each of them during the week, gaining hands-on experience using the MAKO. We were able to use it during total hip and knee arthroplasties, as well as unicompartmental knee replacements.

It was good to see its use in different scenarios as they use it in both direct anterior and posterior hip approaches (in both express and enhanced femoral workflows), combined with the Anato Femoral Hip Stem where special attention must be placed on assessing the pre-operative femoral version seen on CT as the stem comes in a range of anteverted and neutral neck options. This allows the Surgeon more flexibility when recreating the patients' natural femoral version.<sup>1,2</sup> Regarding its use in TKA, the set up was similar to that seen in Hannover, and was good to explore their methods and learn from their 'tip and tricks' to improve outcome.

After the operating list on Monday we were invited to their departmental teaching session where several of their Specialist Registrars presented a variety of topics relating to elective Orthopaedics, including kinematic alignment of the knee, with the majority of the presentations in French.

We had the opportunity to spend time with the team away from theatres as Prof. Kouyoumdjian invited us to his favorite rooftop restaurant for dinner one night (overlooking a Roman amphitheatre) and to his family home for a blind wine-tasting challenge and a lovely home-cooked meal. We had also spent a day with Prof. Kouyoumdjian as he drove us to Saintes-Maries-de-la-Mer, a beautiful fishing town on the Mediterranean Sea, and around the Camargue National Nature Reserve.

It was a pleasure to spend time in Nîmes and Prof. Kouyoumdjian's team who were very welcoming and keen to let us operate during our visit. Since our return we have continued to be in contact with his team and hope to collaborate on some research projects.



*Dinner at Prof Kouyoumdjian's house (centre) with other members of the Department*

### **London Experience**

We arrived in London where we had intended to spend the full week at the University College Hospital and Princess Grace Hospitals with Prof Fares Haddad; but unfortunately, the elective operating lists at UCH were cancelled due to COVID-19. However, we were able to attend the Princess Grace Hospital for two full day lists and gain further exposure to MAKO assisted hip and knee replacement, as they were the first private hospital in the UK to offer robotic Orthopaedic procedures since 2016.

Despite the limited time spent with Prof Haddad it gave us an opportunity to discuss the role MAKO has had and impacted upon his practice, and learn from his wealth of experience as he has demonstrated significant advantages of using the MAKO in terms of reducing length of stay and lower pain scores, and more accurate bony cuts with reduced soft tissue releases compared to conventional jig-based techniques.<sup>3-5</sup>





*The Fellows with Prof Haddad*

To conclude, we are very grateful to be awarded the first EFORT Robotic Travelling Fellowship which took us to three great centers across Europe and would like to thank our hosts for their generosity and excellent care. We would particularly like to thank EFORT for this opportunity and for the help and support from Lidia Sloutskovski who worked hard to ensure the logistics went smoothly, and to Stryker, in particular Mark Vernon, for their sponsorship.

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